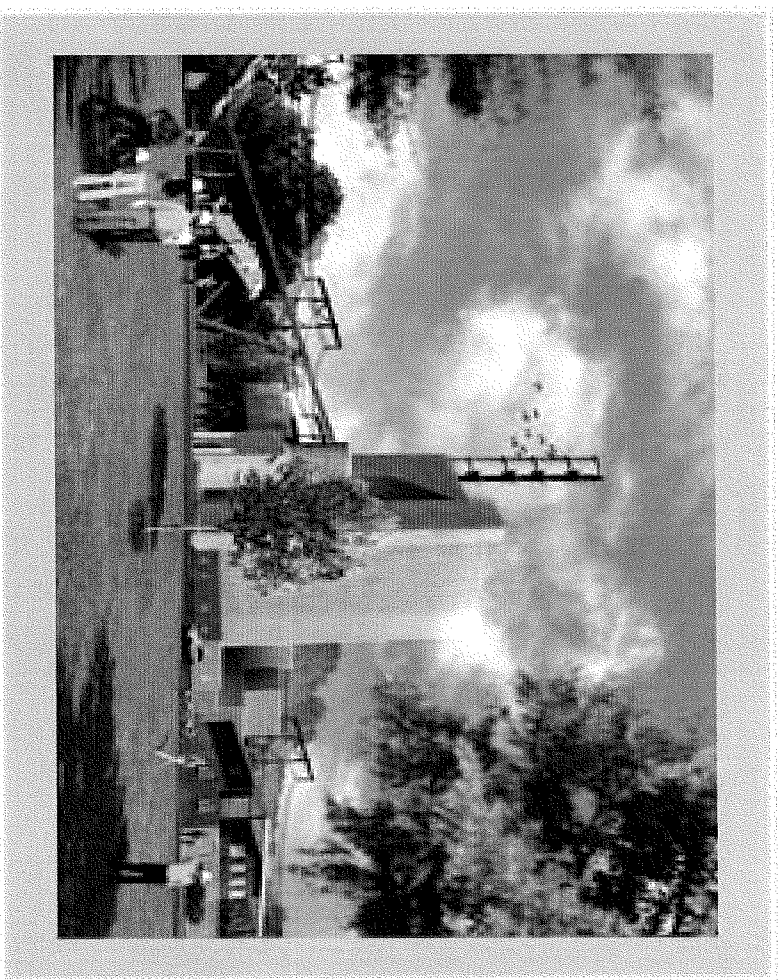


ecoPower Generation

50 MW Biomass Plant Project Overview June 30, 2010

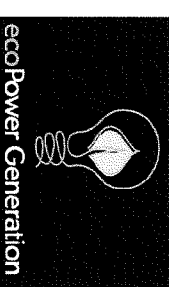
Summary

- Description
- Advantages
- Participants
- Execution
 - *Strategy*
 - *Site*
 - *Process*
 - *Technology*
 - *Biomass Fuel*
 - *Permitting*
 - *Interconnection*
- Schedule Milestones
- PPA Approach
- Public Awareness



ecoPower Generation

Description



Facility: 56 MW+/- (Nominal) Biomass Facility

Location: Hazard, Kentucky

Fuel: Byproducts from the manufacture of green hardwood lumber, dry material byproduct of hardwood flooring and cabinet manufacturing, low grade logs

Technology: Fluidized bed combustion, steam turbine, air cooled condenser, on-site material handling and processing system

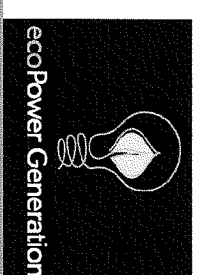
Water: Potable water from the City of Hazard and discharging wastewater to the public sewer system

Interconnection: PJM at 69kV Engle substation thru AEP's Kentucky Power Company

Timeline- Feasibility Phase Complete (Dec 2009)

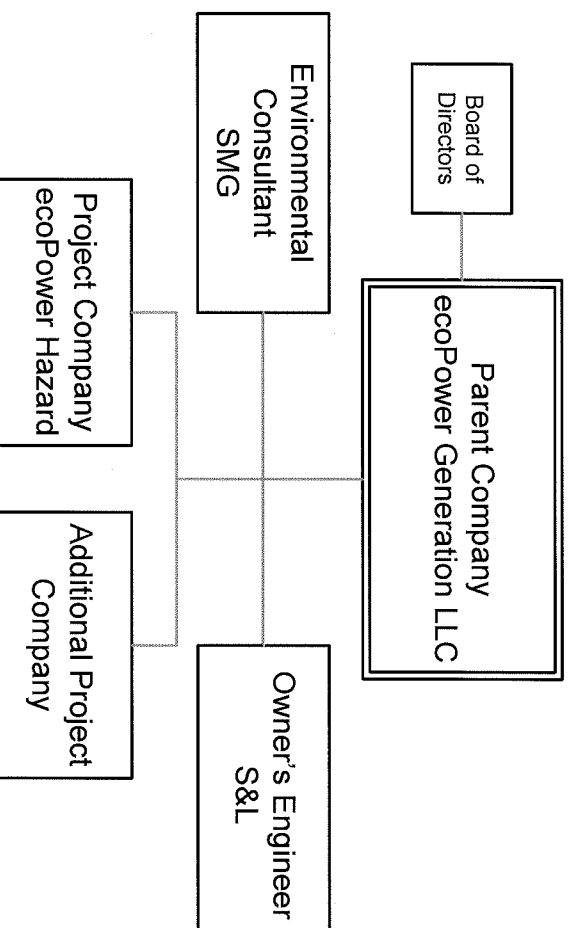
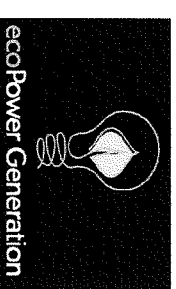
- Major Equipment Contracts/Financial Close (September 2010)
- Construction Start – Fourth Quarter of 2010
- Operating Second Quarter of 2013

Advantages



- Biomass electricity generation is cost competitive, reliable, baseload renewable technology
- 9 of 13 PJM states and D.C. have Renewable Portfolio Standards requirements.
- Renewable Energy Generation
 - *Approx 417,000 MWh of renewable energy per year (85% capacity factor)*
- ecoPower expertise in the wood industry
- Energy created by this project is carbon neutral

Participants



Additional Participants:

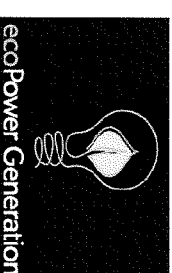
Pine Mountain Lumber – Primary Fuel Supplier: 30 - 40% +/-

PML Owners have a majority interest in ecoPower

Expertise within ecoPower

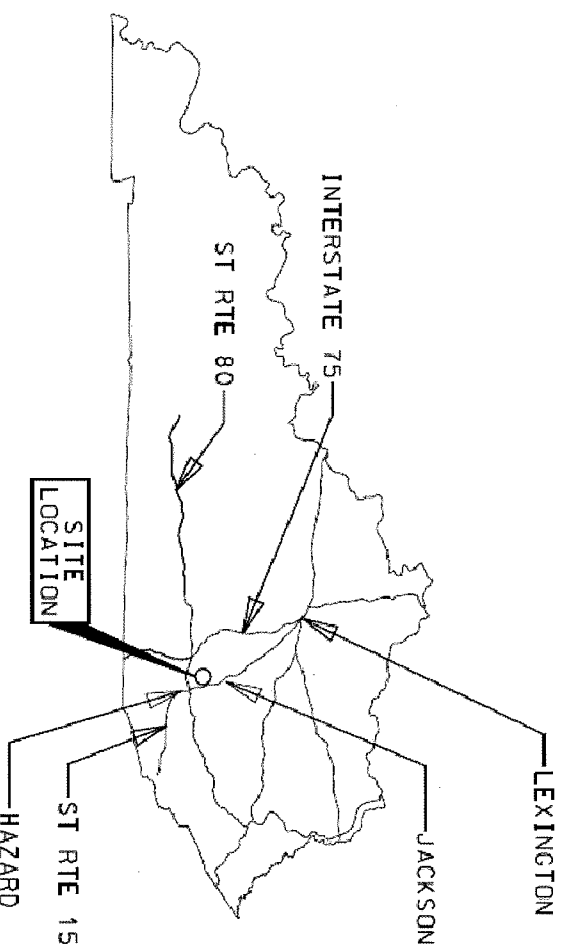
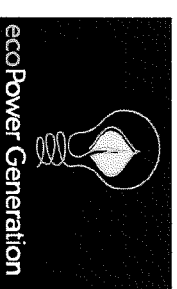
- Utility Experience in Generation/Operations
- Fuel Procurement/Forestry Management

Execution Strategy



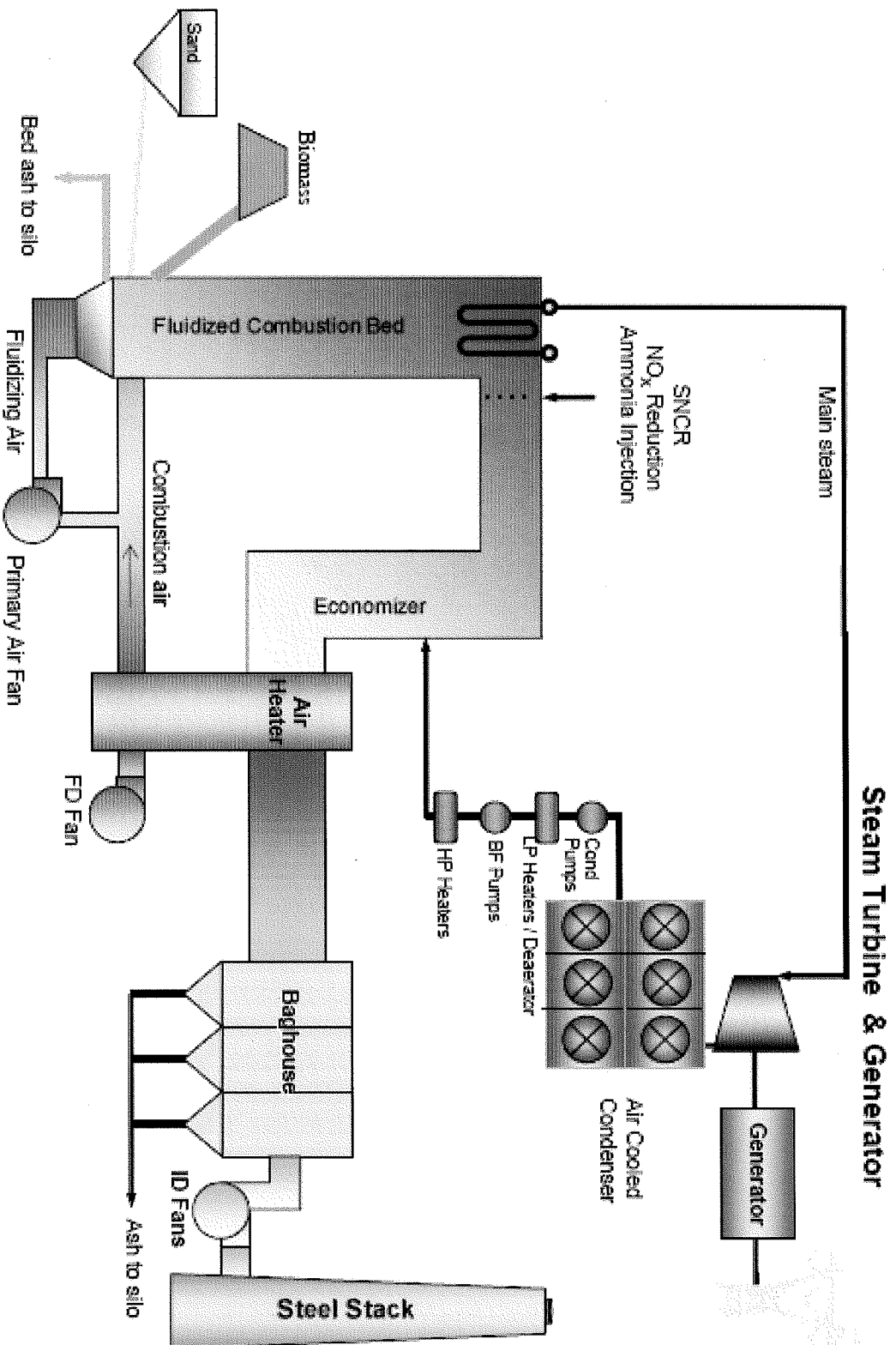
- Take advantage of economic incentives (Kentucky Economic Development Finance Authority)
- ARRA Section 1603 Grant – Treasury Grant Program
- Project Development
 - Feasibility analysis complete
 - Project pro forma completed
 - Expenses (capital cost estimate, fuel supply analysis, O&M)
 - Revenue (power purchase, ash off-take)
 - Financial Inputs
 - Permitting – Air and Siting Board Approvals Complete
 - Contract approach – EPC Development
 - Operating and Maintenance Approach
- Long term company strategy – replicate the design in other “Wood Baskets”

Site



- Approx. 10 miles north-northwest of Hazard, near the town of Engle, in Perry County, KY
- Approx. 125 acres of unimproved land - Coal Fields Industrial Park
- Land option exercised Oct 7, 2009

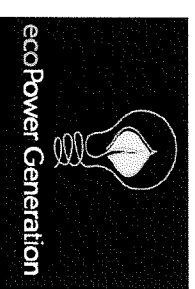
Process



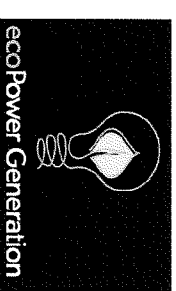
Technology

- Fluidized Bed Boiler
- Minor Emission Source <250 TPY NOx, SO2, CO, VOC, PM10, and PM2.5
- Combustion Controls to limit NOx, CO, VOCs emissions
- SNCR/SCR to Control NOx emissions
- Fabric Filter to Control Acid Gases and Particulate Emissions
- On-Site biomass preparation and handling

		Annual Average Conditions VWO with Operating Margin
Boiler Design		Fluidized Bed Combustion
Condenser Design		Air Cooled Condenser
Main Steam Conditions	psig/°F	1,800 / 950
Gross Plant Output	kW-gross	56,000
Net plant heat rate	Btu/kWh	12,500
Auxiliary Power Requirements	kW	6,000
Turbine Heat Rate	Btu/kWh	~9,000
Net Plant Output	Net-kW	56,000
Full Load Heat Input to Boiler	mmBtu/hr	685
Fuel Feed Rate	lb/hr	132,000
Annual Fuel Consumption	tons/year	576,000



Biomass Fuel



-Targeting potential fuel suppliers within 55-60 miles

->200,000 tons of mill residuals within 55 miles

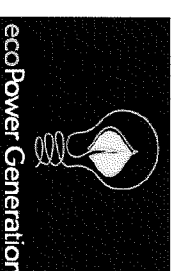
- Annual growth of 1.01 Million Tons of low grade timber within 55 miles not including upper logs from sawtimber trees

• “..... there is a need for facilities of this type in the region due to the overabundance of the low grade fiber resource. The facility is not directly competing with a large, active market for pulpwood fiber.”
American Forest Management, Inc.

Reference Fuel Analysis

Proximate Analysis	
Ash %	1.81
Moisture %	36.71
Volatile Matter %	54.35
Fixed Carbon %	7.08
Ultimate Analysis	
Ash %	1.81
Moisture %	36.71
Carbon %	31.23
Hydrogen %	3.66
Nitrogen %	0.12
Sulfur %	0.02
Oxygen %	26.46
Chlorine ppm	65
HHV, Btu/lb	5,109

Permitting



Main Boiler Emissions Summary

-Final Air Permit Issued June 16, 2010.

- Title V Operating permit under “synthetic minor” classification.

- Kentucky Siting Board Certification approved May 18, 2010

- Other local permits as required

Pollutant	Controlled Emission Rate	Emission Control Technology
NO _x	0.08 lb/mmBtu (30-day rolling average)	Selective Non-Catalytic Reduction (SNCR)
CO	0.07 lb/mmBtu	Combustion Controls
SO ₂	0.078 lb/mmBtu	Low sulfur content of the biomass fuel
PM (filterable)	0.020 lb/mmBtu	Fabric Filter (FF)
PM ₁₀ (filterable)	0.015 lb/mmBtu	Fabric Filter (FF)
Total PM ₁₀ (filterable + condensible)	0.028 lb/mmBtu	Combustion Controls and FF
PM _{2.5} (filterable)	0.011 lb/mmBtu	Fabric Filter (FF)
Total PM _{2.5} (filterable + condensible)	0.024 lb/mmBtu	Combustion Controls and FF
VOC	0.017 lb/mmBtu	Combustion Controls
Sulfuric Acid Mist	0.0002 lb/mmBtu	Low sulfur content of the biomass fuel and FF

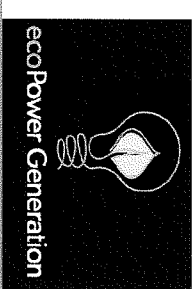
Interconnection

- Engle 69 kV substation located less than one mile from the property
- PJM Study indicates no overloads under normal or contingency conditions
- PJM Interconnection Application submitted October 23, 2009
- PJM Queue V3-055
- System Impact Study – 6/30/10



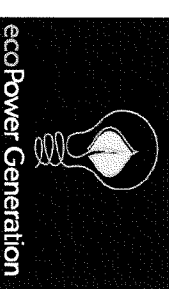
Interconnection Line

Interconnection Process



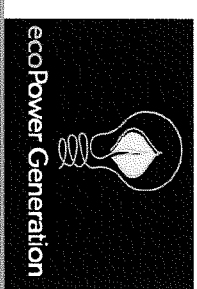
- PJM Interconnection Application submitted October 23, 2009. 3 phase process:
 - Feasibility Study: Jan 2010
 - System Impact Study: Jun 2010
 - Interconnection Services Agreement: July 2010
- Preliminary No Impact Result
- Expedited Interconnection Services Agreement
- Interconnection Construction Complete: July 2011

Schedule Milestones



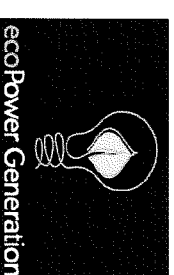
PJM Interconnection Application Submitted	October 23, 2009
Technical Feasibility Complete	January 2009
Air Permit Issued	April 2010
Siting Board Permit Issued	May 2010
Financial Close	September 2010
Major Equipment Contracts Awarded	4 th Q 2010
Construction Start	4 th Q 2010
COD	June 2013

PPA Approach



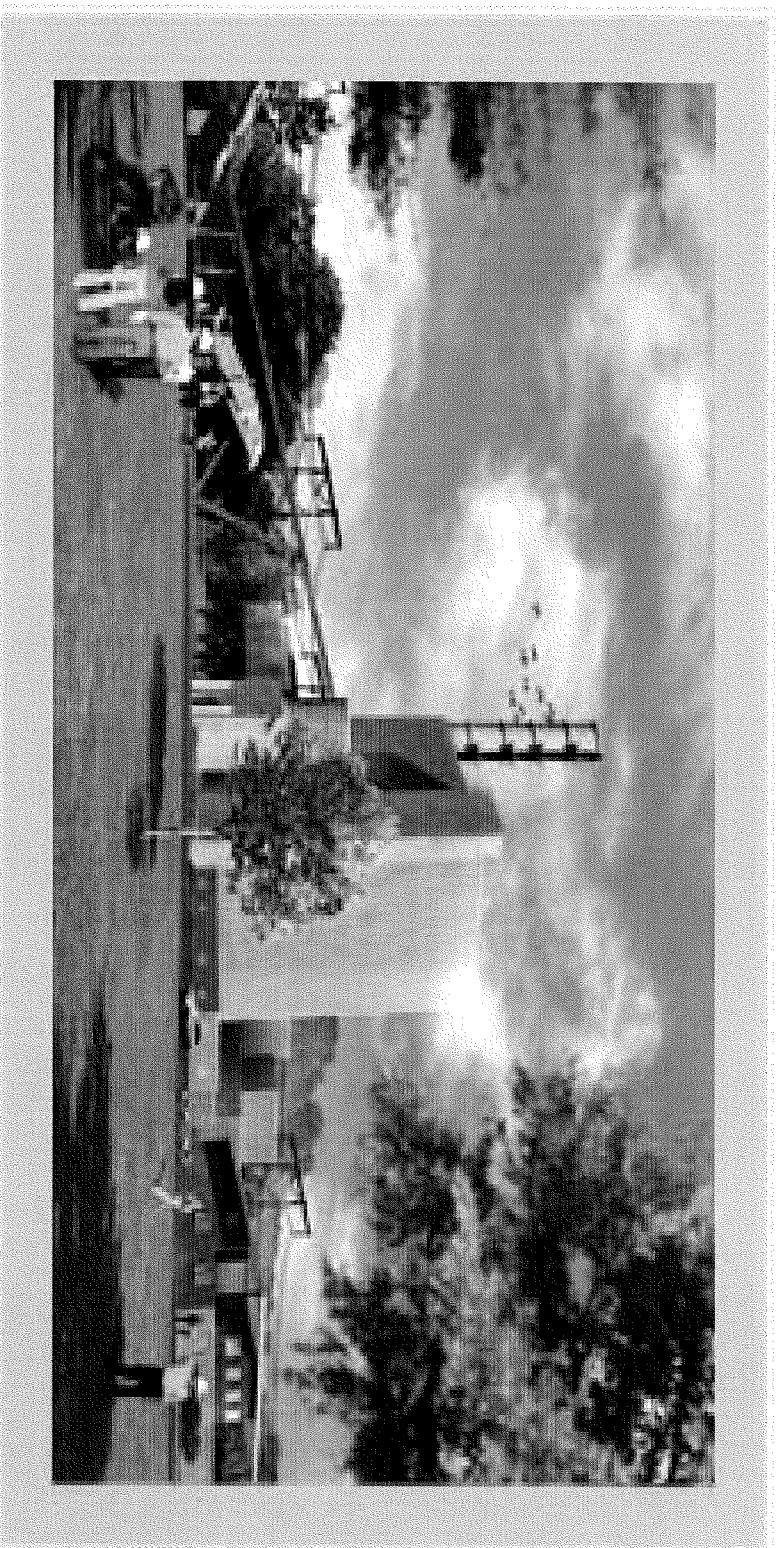
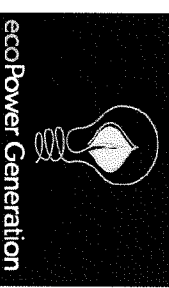
- Firm Full Period Baseload Capacity – High Availability
- Term – Up to 30 years
- Pricing –
- *All in \$/MWh*
- *Capacity, Energy, RECs, Ancillary Services*

Public Awareness



- Meetings with the Governor of Kentucky
- Kentucky Secretaries of Energy, Finance
- Meetings with local officials-Perry County
- Plant announcement – December 10, 2009
- Meetings with Kentucky Department of Environmental Protection, Division of Air Quality, Plant Siting Board
- Public Meeting – Jan 5, 2010
- Press Releases – December 10 and December 30
- Website: www.ecopg.com

ecoPower Generation



Questions/ Discussion